ABSTRACT

A redundant network and communication protocol is disclosed having host computers, RF base stations and roaming terminals. In one embodiment, this network utilizes a polling communication protocol which, under heavy loaded conditions, requires that a roaming terminal wishing to initiate communication must first determine that the channel is truly clear by listing for an entire interpoll gap time. Thus, when a "hidden" terminal is communicating, the roaming terminal can conclude that such communication is taking place upon receiving a polling frame directed to that "hidden" terminal from the normally silent base station. In a further embodiment, a criterion used by the roaming terminals for attaching to a given base station reduces conflicts in the overlapping RF regions of adjacent base stations. Also, in another embodiment, inherent redundancy techniques are used with a spanning tree approach for determining the most efficient pathways from a source to a destination for ensuring that the network adapts to spatial changes or break downs within the network.